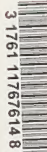




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SECTOR COMPETITIVENESS FRAMEWORKS TELEHEALTH INDUSTRY HIGHLIGHTS

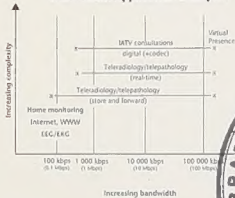


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HIGHLIGHTS

Telehealth is the use of communications and information technology to deliver health and health care services and information over large and small distances.

Network Bandwidth and Complexity, with Health Application Examples



Source: Telemedicine Today, 1996 Buyer's Guide and Directory

■ In June 1997, more than 300 Canadian companies were active in the telehealth business, of which 121 have registered themselves in Industry Canada's Canadian Company Capabilities database. These Canadian telehealth companies are either very large, such as computer manufacturers and telecommunications carriers, or small, such as software developers, consultants, or research and development (R&D) or service providers.

■ Employment in the telehealth private sector companies is estimated at around 1 700 people, mainly highly skilled professionals and technicians. The combined estimated annual revenue of these 121 companies is \$330 million. The industry is growing quickly: the projected sales potential is \$1 billion a year by 2000, with employment at 5 000 people.

■ Much of the basis for recent growth and prospects of the telehealth industry lies in the fact that telehealth is one avenue for maintaining quality health care in an environment where budgets are constrained/declining. Canada spent an estimated \$75.2 billion on health in 1996, or \$2 511 per person, representing 9.5 percent of gross domestic product. A decrease of 0.6 percent was recorded in 1996, which is the fourth consecutive year of decline in spending (disregarding inflation).

■ Canada's health care expenditures do not include special budgets for telehealth. However, a brief overview of telehealth systems available on the market today indicates there are many telehealth applications that can, and increasingly are, facilitating or substituting for conventional health care procedures. Current Canadian telehealth projects are valued at an estimated \$500 million. Provincial

and federal governments will spend another \$500-750 million on telehealth sites and projects over the next three to five years.

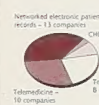
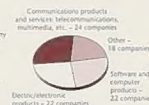
MAJOR TRENDS

- One of the most important trends in the telehealth industry today is that of integration of the various applications over one network, or in a series of interconnecting networks, designed to span a range of health care applications to meet different needs using a variety of technological combinations.
- Today, telehealth faces two major trends: increasing demand and technological advance, due to the following factors:
 - An aging population: The needs of aging health care consumers have initiated efforts to develop and adopt better telehealth systems outside institutional walls where they would be better geared for the home telecare industry.
 - Cost containment: Telehealth systems are facilitating redistribution of health care services, cutting down on duplication, potentially helping to reduce the number of drug interactions and inappropriate prescriptions, reducing patient and professional travel, and generally contributing to better productivity and reduced unit cost.

- Access: There is increasing demand for equitable access to health care services for inhabitants of isolated geographic areas (for example, in sparsely populated areas of Canada's North and in many parts of Latin America, China and Africa).
- Demand: The increasing consumer demand for wellness and health information of all kinds has fuelled increased access to the Internet and the World Wide Web.
- Increasing sources of information: The exponential increase in medical and health information has led to demands for better medical information management systems, faster and more efficient electronic access, and better online research networks.
- Technology and its economic significance: Computer hardware, other more powerful technologies and communications bandwidth are becoming available at decreasing costs.
- Private sector involvement: In Canada, this now is more prominent than in past telehealth projects, facilitating technology transfer and commercialization.

Telehealth Companies in Canada, by Activity

(N = 121 (foreign registrants))

Primary**Secondary**

Source: Industry Canada Canadian Telehealth Company database, April 1997

- Telehealth projects five to ten years ago were mainly driven by remote consultation needs (telemedicine) or distance health and continuing medical education (CME). But only 30 percent of today's Canadian telehealth projects are based on telemedicine. The largest number of start-up projects are concentrated on integrated health networks, one component of which may be telemedicine.
- These evolutions have resulted in important changes for communities. Hospitals are being fused, downsized, shut down and modified to handle ambulatory care clients. The current era is also characterized by the linking of new technologies, by the provision of technologically mediated services directly to consumers, and by the gradual decrease in the role of the hospital as the central authority in health care in favour of electronically linking all services and participants in a community's health care system.

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Sector Competitiveness Frameworks are a new series of documents produced by Industry Canada in collaboration with Canada's key industry stakeholders. Each framework will examine a major Canadian industry sector, and will be prepared in two volumes. *Part 1 — Overview and Prospects* focusses on the opportunities, both domestic and international, as well as on the challenges facing industry sectors in Canada. *Part 2 — Framework for Action* will be based on discussions with major industrial stakeholders, following study and review of the *Overview and Prospects*.

The objective of the **Sector Competitiveness Frameworks** series is to seek ways in which government and private industry together can strengthen Canada's competitiveness and, in doing so, generate jobs and growth.

In all, some 30 industrial sectors will be analyzed. Electronic copies of documents in the series are available on the Internet at the following address: <http://strategis.ic.gc.ca/scf>

■ For the health care professionals, the central focus of this new era is the penetration of the electronic health record and the electronic or computerized patient record, of faster access to information even before it is published and of more versatile desktop multimedia tools. New technology produces unmet educational and training needs at the same time as it offers more efficient means to keep up-to-date on developments in health. CME provided by traditional means will never meet that demand. Telehealth networks facilitate distance education and tele-learning.

■ The world market for telehealth systems and services is expected to grow dramatically over the next decade. In the developed world, the most important growth area is expected to be in the home care market, where a range of devices and technologies can be substituted for services traditionally delivered in hospital settings, or by visiting home care workers. In the United States alone, more than US\$26 billion was spent on home care in 1994. Canadian provincial government budgets for home care alone amounted to close to \$1.5 billion in 1995-96.

■ Taking into account the telehealth sales of other companies whose primary business is in other fields, the Canadian telehealth industry amounts to a minimum of \$330 million annual revenues. While many Canadian companies are too small or too inexperienced to bid successfully on larger projects in Canada, it is expected that some recent Canadian public initiatives will help stimulate the industry and improve technological capacity of Canadian companies.

CHALLENGES, ISSUES AND BARRIERS

■ By almost any measure, the telehealth industry in both Canada and the United States, even in its oldest and best-known form — remote telemedicine — has remained until recently a health services subsector with a small devoted set of pioneers, researchers and practitioners operating in an environment dependent on government subsidies and R&D grants. As late as January 1996, the field was still very small and had not grown much since its origins some 30 or 40 years ago.

■ Despite proliferation of new applications, the size of Canada's telehealth industry is relatively small and undeveloped. This state of affairs may be attributed to a range of barriers and major issues confronting the private and public telehealth industry.

■ The industry is fragmented. Market distribution channels are absent and every firm entering this field does so at more than normal risk, since there are few published market studies. It therefore remains difficult to make a business case for the adoption of telehealth systems.

■ Though a majority of the Canadian telehealth companies claim to be exporters, few are exporting telehealth products and services. In part, this reflects underdeveloped marketing capacity, including lack of familiarity with overseas markets and with foreign distributors for telehealth products. In addition, the shortness of the track record of many Canadian companies means a lack of knowledge abroad of much of Canada's telehealth capability.

■ While there is a demonstrated need for turnkey, trouble-free telehealth systems, there are very few companies capable of providing such services.

■ Stable financing is difficult to find for both the private and public industries.

■ Several smaller companies have either sold controlling interest or have struck viable partnerships with U.S.-based and overseas companies. Though this has advantages, it does mean fewer made-in-Canada technologies and products.

■ The evolution of telehealth-related technologies is so rapid that even small, young companies must invest with caution in any given product or system.

■ The industry is in its infancy, and many potential users have little knowledge or experience in the field.

■ Some 30 percent of Canada's telehealth projects involve medicine-at-a-distance, but physicians might not be licensed nor remunerated for their telemedicine work.

■ Telephone triage systems allow nurse-practitioners to provide health care advice over the telephone. However, potential liability issues exist.

■ With ambulatory care on the rise, home care telehealth technologies could be adopted on a wider scale but few technologies are available in Canada, and few professionals are aware of the range of the technologies available.

■ Confidentiality, privacy and security on the health networks are still causing concern among patients and providers alike.

■ Over 80 percent of telehealth industry participants interviewed stated that lack of common standards hampers the development of telehealth networks in Canada.

■ Good partnership models are needed to help private and public sector partners work together toward the implementation of successful telehealth systems.

THE BOTTOM LINE

■ Telehealth development is closely linked to the development and penetration of information and telecommunications infrastructures. Many challenges, however, have to be resolved in Canada and in many parts of the world before the telehealth industry can experience significant growth. There is a clear role for the public sector and private industry to play in addressing these issues and challenges by working together.

■ The best telehealth projects and sites combine expertise of health users together with the best suppliers of technological innovations.

■ Familiarity of foreign markets with Canada's competence needs to be strengthened if Canadian suppliers are to participate fully in this growing global market. Public sector institutions and resources assisting in export market development will need to be brought to bear even more in the future to assist Canada's telehealth industry to capitalize on market opportunities.

For further information concerning the subject matter contained in these Highlights, please contact:

Health Industries Branch

Industry Canada

Attention: Penny Stratas

235 Queen Street

OTTAWA, Ontario

K1A 0H5

Tel.: (613) 957-8426

Fax: (613) 952-4209

E-mail: stratas.penny@ic.gc.ca